



ABSTRACTS

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## BUMBLE BEES AS ENTOMOVECTORS IN OPEN FIELDS OF STRAWBERRY

**MÄND M., KARISE, R.**

Estonian University of Life Sciences, Institute of agricultural and environmental sciences, Kreutzwaldi 1, 51014, Tartu, Estonia

Strawberry *Fragaria x ananassa* is a fruit plant which production has been constantly growing. In strawberry plantations the grey mould *Botrytis cinerea* is one of the most often encountered problem destroying the fruits both before and after harvesting. The majority of the grey mould infection on fruits originates from flowering period. The problem by both chemical and biological control methods is the application frequency, since the receptiveness of the flowers to the fungus is highest during dehiscence and first days of the flowering. Using foraging bees as disseminators of microbial pest control agents guarantees attaining the pest control agent to flowers at the time it's most needed with relatively few labour. The aim of this study was to investigate in what extent bumble bees *Bombus terrestris* visit strawberry flowers in open fields.

Bumble bee hives were purchased from BioPest, Belgium. One triple hive was placed near 0,9 ha strawberry field which situated in forested area where no other bee foraging cultivars were present in the radius of 1,5 km. Two triple hives were placed to a strawberry field which situated in more intense agricultural area in the middle of apple and berry orchards. Pollen pellets from homing forager bumble bees (N=10 per observation day, 5 days per flowering period) were gathered. Acetylation method was used to dissolve the pollen pellets for light microscopy to determine the plant species visited by bumble bees.

Our results show that bumble bee gathered pollen contained 40% strawberry pollen and 1/3 of them visited mostly or only strawberry during one foraging trip. We found also that forages from neighbouring nests used different forage plants. Although bumble bees do not recruit nest mates like honey bees, the indirect mechanism through food smell still might affect the choice of young foragers. There was a negative correlation between proportion of strawberry pollen in corbiculas and the weight of pollen pellets. Since strawberry flowers provide mostly pollen and very few of nectar, it is likely that bees switched the plant species to find more nectar. The rate of strawberry infection by grey mould decreased from 18% on isolated control plots to 6% on bumble bee visited plots.

**Key words:** entomovectoring, bumble bees, strawberry, pollen collection